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WITHAM URBAN DISTRICT

REPORT

OF THE

Medical Officer of Health

W. J. MOFFAT

M.B., Ch.B., D.P.H.

FOR THE YEAR 1946

TOGETHER WITH THE

REPORT OF THE

CHIEF SANITARY INSPECTOR

J. H. Clarke & Co., Printers
High Street Witham

WITHAM URBAN DISTRICT COUNCIL

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W. J. MOFFAT, M.B., Ch.B., D.P.H.

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E. H. C. WADHAMS, M.R.San.I., M.S.I.A.

Additional Sanitary Inspector :

H. FIELD, M.S.I.A. (appointed Dec. 1946).

Clerical Assistant :

D. M. JEFFERY (resigned June, 1946).

J. BANKS (appointed April, 1946).

PUBLIC HEALTH OFFICES,
TOWN HALL, BRAINTREE.

August, 1947

MR. CHAIRMAN, MADAM AND GENTLEMEN,

I have the honour to submit to you my Annual Report on the health and sanitary conditions of the Witham Urban District for the year 1946.

During the whole of 1946, Dr. T. G. Benjamin continued to hold the appointment of Acting Medical Officer of Health, pending my return from service with H.M. Forces.

The general health of the District has been maintained. The birth rate reached its highest level for twenty years, the death rate remained low.

An outbreak of food poisoning, affecting several hundreds of persons in the Urban District occurred in July. The vehicle concerned in this outbreak was found to be meat distributed from the Ministry of Food Slaughterhouse at Witham.

The provision of new housing accommodation has been the principal activity of the Council during the year. There is much old property which is still occupied and which is well below standard. This is in urgent need of replacement. It will be several years before both the pre-war requirements and the demands arising since, for housing, can be adequately fulfilled. The house building programme will necessarily be a major activity of the Council for some considerable time.

The existing sources of water supply, namely Bradwell Springs and Braintree Road Waterworks proved to be not quite adequate for the needs of the District during the year, and a supplementary supply was obtained by connecting to Braintree Rural District Council's supply at Bradwell, which supply is derived from the South Essex Waterworks Company's main. Arrangements have been made for the Urban Council to obtain additional supplies in future direct from the South Essex Waterworks Company's main at Wickham Bishops.

There is accumulating evidence that the sewerage system of the town of Witham will soon require extensive improvement. This will become increasingly necessary as future expansion proceeds. The sewerage system at Silver End is, and should be for some time, adequate for the needs of that part of the District.

I wish to place on record my appreciation of the help and support from the members of the Council and of the co-operation so freely given by the Council's Officers to Dr. Benjamin during the period of my absence on war service from 1942 to 1946.

I am, Mr. Chairman, Madam and Gentlemen,

Your obedient Servant,

W. J. MOFFAT.

GENERAL STATISTICS.

Area : 7,329 acres.

Population (estimated mid-1946) 7,960.

Number of inhabited houses according to rate books, 2,250.

Rateable value, £41,053. Sum represented by a penny rate, £156.

SOCIAL CONDITIONS. There has been no change of any note since 1939. There has been no unemployment problem.

VITAL STATISTICS.

It was not feasible during the war years to publish annual figures, but the opportunity is now taken to present certain of the Vital Statistics for the years 1939-46 inclusive.

The Vital Statistics relating to estimated mid-year populations of the District, Birth Rates and Death Rates, local and national, for each year from 1937 to 1946 are given in Table I.

In Table II are set out the Causes of Death according to the figures supplied by the Registrar General for the period 1939-46. The figures for 1939 have, as far as is possible from local knowledge, been assigned to the Abridged List of Causes of Death used by the Registrar General from 1940 onwards, and as set out in the Manual of the International List of Causes of Death of 1938.

Table III gives the deaths occurring in the various age groups of Residents of the District in the years 1939-46, whether these deaths took place inside or outside the District.

Table IV contains extracts from the Vital Statistics of the District relating to live Births, legitimate and illegitimate, Stillbirths and Death Rates of infants legitimate and illegitimate under one year of age for the same period.

TABLE I

VITAL STATISTICS FOR 1946 AND PREVIOUS YEARS

Year	Population Estimated mid-year	BIRTHS			DEATHS										Natural Increase (Excess of Births over Deaths)
		NETT			TRANS- FERABLE			NETT							
		Number	Rate	Rate England & Wales	TOTAL NUMBER REGISTERED IN DISTRICT	of Non- Residents registered in District	of Residents not registered in District	Under 1 Year of Age		At all Ages					
								Number	Rate per 1000 net births	Rate England & Wales	Number	Rate	Rate England & Wales		
1937	7162	111	15.4	14.9	54	5	16	2	18	58	65	9.0	12.4	46	
1938	7243	104	14.4	15.1	52	13	19	5	48	53	58	8.0	11.6	46	
	a7293														
1939	b7491	103	14.1	14.8	76	23	39	5	49.5	x50	87	11.6	12.1	16	
1940	7707	102	13.2	14.1	68	10	26	4	39.2	x57	84	10.9	14.4	18	
1941	7929	121	15.6	13.9	67	7	20	3	24.8	x60	80	10.1	13.5	41	
1942	7781	124	15.9	15.6	52	11	26	3	24.2	x51	67	8.6	12.3	57	
1943	7949	114	14.3	16.2	53	10	28	2	17.5	x49	71	8.9	13.0	43	
1944	7735	128	16.6	17.7	61	14	27	8	63.5	x45	74	9.6	12.7	54	
1945	7619	145	19	15.9	71	18	28	10	68.9	x46	81	10.6	12.6	64	
1946	7960	170	21.5	o19.1	66	6	25	6	35.3	x43	85	10.7	o11.5	85	

a. For calculation of Birth Rate.
 x. Rate per 1000 "related" births.
 b. For calculation of Death Rates and Notifiable Disease.
 o. Provisional.

TABLE II

The Table below was compiled from figures supplied by the Registrar General and the classification is given under the new abridged list of causes of death as used in England and Wales contained in the Manual in the International List of Causes of Death.

Cause of Death	1939		1940		1941		1942		1943		1944		1945		1946	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Typhoid and paratyphoid fevers	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cerebro-spinal fever	—	—	—	—	—	—	1	—	—	—	—	—	1	—	—	—
Scarlet fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Whooping cough	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1
Diphtheria	—	1	—	—	—	—	—	—	1	—	—	—	—	—	—	—
Tuberculosis of respiratory system	2	1	2	1	1	1	1	1	3	1	—	1	—	1	1	—
Other forms of tuberculosis	—	—	—	—	—	—	—	—	—	1	—	1	—	1	1	—
Syphilitic disease	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Influenza	3	—	1	—	—	2	—	—	1	1	—	—	—	—	—	—
Measles	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—
Acute poliomyelitis and polioencephalitis	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—
Acute infectious encephalitis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cancer of buccal cavity and oesophagus (M) uterus (F)	—	—	—	—	2	1	—	1	—	—	2	2	—	2	—	—
Cancer of stomach and duodenum	1	—	1	2	2	1	—	1	1	—	2	2	1	2	3	—
Cancer of breast	—	1	—	4	—	2	—	2	—	1	—	3	—	2	—	—
Cancer of all other sites	5	3	1	2	5	3	1	1	4	3	3	3	9	2	4	3
Diabetes	1	1	—	—	—	1	—	—	—	1	—	—	—	—	—	—
Intra-cranial vascular lesions	2	11	3	7	5	7	3	9	5	8	3	5	1	4	6	6
Heart disease	11	11	20	12	12	8	11	7	10	8	10	8	14	13	11	16
Other diseases of circulatory system	1	2	—	—	—	3	—	1	—	1	—	1	—	1	2	2
Bronchitis	—	2	2	3	3	—	1	3	—	1	2	2	2	1	2	1
Pneumonia	3	1	2	1	1	3	2	—	2	2	—	2	1	1	3	1
Other respiratory diseases	—	—	—	—	2	—	—	1	—	—	2	1	—	2	—	—
Ulcer of stomach or duodenum	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—
Diarrhoea under 2 years	—	—	—	1	—	—	—	—	—	—	—	1	—	1	—	—
Appendicitis	—	—	—	—	1	—	1	—	—	—	—	—	—	—	—	—
Other digestive diseases	2	—	1	—	—	2	3	—	—	1	3	—	1	—	1	1
Nephritis	—	1	2	1	—	—	1	—	1	—	2	1	—	1	3	1
Puerperal and post-abortive sepsis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other maternal causes	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Premature birth	1	1	—	—	—	—	—	—	—	—	3	—	1	1	—	1
Congenital malformation, birth injury, infantile disease	1	2	1	—	1	2	1	—	—	—	—	2	2	1	1	2
Suicide	—	—	1	—	—	1	1	—	—	—	1	—	—	—	—	—
Road traffic accidents	2	—	—	—	—	—	1	—	—	—	1	—	—	—	1	1
Other violent causes	2	1	1	—	1	—	—	4	1	—	—	1	1	1	—	1
All other causes	4	6	4	8	3	4	3	5	6	6	1	2	4	4	6	3
ALL CAUSES	41	46	42	42	39	41	31	36	34	37	36	38	39	42	45	40

TABLE III

NETT DEATHS AT THE SUBJOINED AGES OF "RESIDENTS" WHETHER
OCCURRING WITHIN OR WITHOUT THE DISTRICT

	At all ages	Under 1 year	1-2 years	2-5 years	5-15 years	15-25 years	25-35 years	35-45 years	45-55 years	55-65 years	65-75 years	75 and upwards
1939	87	4	—	—	1	4	3	7	3	15	19	31
1940	84	4	—	1	1	1	2	1	6	12	19	37
1941	80	3	—	1	—	2	3	6	7	6	16	36
1942	67	3	—	—	4	—	2	—	6	9	22	21
1943	71	2	1	—	4	1	2	6	7	5	12	31
1944	74	8	—	2	1	2	—	3	5	9	13	31
1945	81	10	—	—	1	—	1	4	5	12	16	32
1946	85	6	—	—	1	—	2	2	7	8	25	34

TABLE IV

EXTRACTS FROM VITAL STATISTICS 1939-46 INCLUSIVE

Year	LIVE BIRTHS						STILL BIRTHS				Death Rate of Infants under 1 year of age.	
	Legitimate			Illegitimate			Total	M	F	Rate per 1000 total (live & still births.)	Legitimate per 1000 legitimate live births	Illegitimate per 1000 illegitimate live births
	Total	M	F	Total	M	F						
1939	101	55	46	2	2	0	5	2	3	47.2	49.5	—
1940	100	54	46	2	1	1	2	1	1	19.6	40	—
1941	113	66	47	8	4	4	2	1	1	16.5	17.7	125
1942	116	64	52	8	4	4	2	—	2	15.9	25.9	—
1943	110	57	53	4	3	1	—	—	—	—	18.2	—
1944	119	58	61	9	6	5	2	2	—	15.4	58.8	111
1945	132	69	63	13	6	7	3	1	2	20.3	68.2	76.9
1946	162	82	80	8	6	2	3	1	2	17.3	37	—

GENERAL PROVISION OF HEALTH SERVICES.

Public Health Officers.

For list, see page **E.1.**

The Medical Officer of Health is also Medical Officer of Health for the Urban District of Braintree and the Rural Districts of Braintree and Dunmow, and Assistant Medical Officer to Essex County Council.

Laboratory Facilities.

The bacteriological laboratory service is provided by the Essex County Council in agreement with the Ministry of Health. The laboratory serving the District is that at Essex County Council Hospital, Black Notley.

Examinations of foodstuffs, including ice-cream, water supplies and sewage effluents are carried out by the Counties' Public Health Laboratories, 66 Victoria Street, London, S.W.1., and of milk supplies by the Essex Institute of Agriculture at Writtle. All of these arrangements are under the control of the County Council.

Ambulance Facilities.

The District Council own a fully-equipped 18 h.p. Austin Ambulance, purchased in 1937. This is available day and night for cases of general sickness and accident in the Urban District, and in the contiguous parts of adjoining districts.

Cases of infectious disease from the District are transported by the motor ambulance belonging to the Maldon Joint Hospital Board. This ambulance is stationed at the Joint Board's Isolation Hospital at Heybridge.

The ambulance services have shown themselves to be adequate for the needs of the District. Under the County Council's arrangements, co-ordination of ambulance services in adjoining districts is secured.

Hospitals.

There are no hospitals within the Urban District. Accommodation for maternity cases is provided at The Bungalow, Collingwood Road.

Cases of general illness from the District are admitted to the general hospitals at Colchester, Chelmsford and Braintree and to the Essex County Council Hospital at Black Notley.

Maldon Joint Hospital Board, of which the Urban District Council are a constituent authority, provides an Isolation Hospital at Heybridge for the reception of cases of infectious disease from the District.

Maternity cases are admitted to St. John's Hospital, Chelmsford, or to the Maternity Block at the William Julien Courtauld Hospital, Braintree.

Accommodation for cases of chronic illness is provided by Essex County Council's Social Welfare Department at St. Michael's Hospital Braintree.

SANITARY CIRCUMSTANCES OF THE AREA.

Water.

The public water supply for the District has been satisfactory in both quality and quantity during the year under review. In order to maintain a supply sufficient in quantity, a temporary supply, to augment the existing sources, had to be obtained from the Braintree Rural District Council's Main at Bradwell in the early part of the year. This latter water is supplied to the Braintree Rural District Council by the South Essex Waterworks Company. The amount obtained by the Urban District through this arrangement was some 44,000 gallons per day during 1946. Up to 70,000 gallons per day can be made available from this source.

The established sources of public supply of main water for the District are the Council's Works at Braintree Road and the Bradwell Spring supply of the Silver End Development Company. The former consists of two deep boreholes into the chalk and has been in operation for over forty years. The dependable yield is some 70,000 gallons per day. The Bradwell Spring supply, owned by the Silver End Development Company, a non-statutory undertaking, supplies water to the Company's garden village of Silver End, and, by agreement with the Council, to other parts of the Urban District. A supply of some 230,000 gallons per day can be relied on from this source, of which some 60,000 gallons goes to Silver End and the remainder to the other parts of the Urban District.

In the case of both sources, the water is subjected to chlorination by the chloramine process before passing into the supply mains.

There are also within the District a number of properties, chiefly in rural localities, which use wells and springs for domestic supply. Not all of these supplies are satisfactory, but it is hoped that the progressive extension of the mains will eliminate these. In particular, it is the intention to provide a piped supply to the majority of such properties in Maldon Road at an early date.

An agreement has been reached between the Council and the South Essex Waterworks Company, whereby the Council will be able to draw on the latter's trunk main at Wickham Bishops up to 500,000 gallons per day. This supply, it is hoped, will be made available in 1947, and when effective, may render unnecessary the supply at present being obtained from the Braintree Rural District Council.

Bacteriological examinations are made regularly both of the raw waters from each source of supply, and of main water as supplied to domestic consumers. The number of such examinations made during the year was : raw water supplies 2, main water in supply 4. All samples, with the exception of one, were satisfactory, in that they were reported upon as being consistent with pure and wholesome water, suitable for drinking and domestic purposes. The exception was a sample from a house on a " dead end " main where algal and bacterial growth occurred as a result of intermittent stagnation due to lack of pressure. After the flushing of this main satisfactory bacteriological reports of the water were obtained.

Samples of water from both sources of public supply are also submitted regularly for chemical analysis. In the year 1946, there were two such analyses of raw water and four of domestic water supplies.

Copies of typical reports by the Counties' Public Health Laboratories of the complete (chemical and bacteriological) analyses of the raw waters from Bradwell Spring supply and the Braintree Road Waterworks will be found on pages 11 and 12 respectively.

No action was required during the year in respect of contamination. The waters are not liable to have any plumbo-solvent action.

The Surveyor has supplied the following information with regard to the water consumption of the District apart from the Silver End area, which is supplied independently.

Total amount obtained during the year from :—

1. Bradwell Springs supply 43,334,000 gallons.
2. Braintree Road Waterworks 29,604,000 gallons.
3. Braintree Rural District Council 12,857,000 gallons.

These amounts represent an average daily consumption per head per day of 26·675 gallons for domestic purposes, and 12·5 gallons for trade purposes.

WATER ANALYSES.

Date of Analysis, 11th July, 1946.

Sample from BRADWELL SPRING SUPPLY.

Chemical Results in Parts per 100,000.

Appearance.	Clear and bright.		
Colour.	Normal.	Odour.	Nil.
Reaction pH.	Slightly acid	...	6.9
Electric Conductivity at 20°	...	...	700
Chlorine in Chlorides	...	...	3.2
Hardness : Total	...	...	37.0
	Temporary	...	28.5
	Permanent	...	8.5
Oxygen absorbed in 4 hrs. at 27°C			0.010
Metals. Iron	...	...	0.010
Other metals absent.			
Free Carbonic Acid	...	...	5.2
Total solids dried at 180°C	...	...	47
Alkalinity as Ca CO ₃	...	...	28.5
Nitrogen in nitrates	...	...	0.50
Nitrogen in nitrites	...	...	Nil
Free Ammonia	...	...	Nil
Albuminoid Ammonia	...	...	0.0004

Bacteriological Results.

	1 day at 37°C	2 days at 37°C	3 days at 20°C
Number of Colonies developing on Agar per c.c. or ml. in ...	0	2	0
Presumptive Coli- form Reaction ...	Present in —	Absent from 100 ml.	
Bact. Coli. ...	Present in —	Absent from 100 ml.	
Cl. welchii Reaction	Present in —	Absent from —	

Report.

This sample is clear and bright in appearance, practically neutral in reaction and free from metals apart from a negligible trace of iron. The water is very hard in character, but not to an excessive degree and is free from any excess of mineral or saline

matter in solution. It conforms to a satisfactory standard of organic quality and bacterial purity.

These results are indicative of a pure and wholesome water suitable for drinking and domestic purposes, although the hardness will be disadvantageous.

R. C. HOATHER,
The Counties Public Health Laboratories.

Date of Analysis, 11th July, 1946.

Sample from BRAINTREE ROAD WATERWORKS.

Chemical Results in Parts per 100,000.

Appearance. Bright with very few particles of mineral debris.

Turbidity. Less than 5 parts per million, Silica Scale.

Colour. Normal.

Odour. Nil.

Reaction pH. Slightly alkaline 8.2

Electric Conductivity at 20°C ... 1950

Chlorine in Chlorides ... 46.0

Hardness : Total ... 4.5

Temporary ... 4.5

Permanent ... 0.0

Oxygen absorbed in 4 hrs. at 27°C 0.030

Metals. Iron ... 0.008

Other metals absent.

Free Carbonic Acid ... 0.3

Total Solids dried at 180°C ... 123.0

Alkalinity as Ca CO₃ ... 30.5

Nitrogen in nitrates ... 0.0

Nitrogen in nitrites less than ... 0.001

Free Ammonia ... 0.096

Albuminoid Ammonia ... 0.0012

Bacteriological Results.

	1 day at 37°C	2 days at 37°C	3 days at 20°C
Number of Colonies developing on Agar per cc. or ml. in ...	0	6	0
Presumptive Coli- form Reaction ...	Present in —	Absent from 100 ml.	
Bact. Coli. ...	Present in —	Absent from 100 ml.	
Cl. welchii Reaction	Present in —	Absent from —	

Report.

This sample is practically clear and bright in appearance and is free from metals apart from a negligible trace of iron. Its reaction is on the alkaline side of neutrality. The water is soft in character and the content of mineral and saline matter in solution, although high is not excessive.

The organic quality and the bacterial purity are satisfactory and these results are consistent with a wholesome water suitable for public supply purposes.

As precautionary treatment for the water, the addition of ammonia or ammonium sulphate is not necessary, but a chlorine dose of about 0.5 parts per million is advisable.

ROY C. HOATHER,

The Counties Public Health Laboratories.

With regard to Silver End, it is estimated that the average daily consumption per head for domestic purposes was 30 gallons.

During the year the water mains in the District were extended as follows :—

Glebe Crescent	600 yards of 4 in. main.
Bramston Green	280 yards of 4 in. main.
London Road (north)	107 yards of 3 in. main.

The number of new connections to the mains in 1946 was 104.

Drainage and Sewerage.

The combined system of main sewers serving the town of Witham are, in some portions at least, seventy years old and unable to take, under conditions of heavy rainfall, both the soil drainage and surface water drainage. Under these conditions, surcharging of the sewers occurs in Guithavon Road, Guithavon Street, Mill Lane, Newland Street and Maldon Road.

Before any proposed future expansion of the District can take place it will be necessary for a survey of the whole sewerage system to be undertaken.

At Silver End, storm water gains entrance to the soil sewers and results in serious overloading at the sewage works and the discharge of much untreated sewage into the river. Slight flooding occurs in times of heavy rain storms in the lower part of Temple Lane.

During the year extensions were made to the main sewers as follows :—

Glebe Crescent	283 yards.
Runnacles Street, Silver End	74 yards.

There were 103 new connections made to the sewer in 1946, 55 in Witham and 48 in Silver End.

The scheme for the erection of a Council housing estate at Rivenhall Oak will include provision for a sewage system capable of dealing with a large number of existing properties in this area, at present unsewered, as well as the new houses to be erected.

Up to the present, no sewers are available to serve the following parts of the District :—

Rivenhall Oak	Maldon Road (southern end)
Rivenhall End	Western Road, Silver End
Rickstones Road (northern end)	Western Lane, Silver End

The Council have decided to proceed with the extension of the soil sewer in Maldon Road.

There are now three Sewage Disposal Plants in the Urban District, namely the Council's Works at Witham and Silver End, and the Works serving Rivenhall Aerodrome. Notes on the functioning of these Works are given below.

WITHAM SEWAGE WORKS. Although these works contrived to produce, on most occasions when samples were taken, a satisfactory effluent, difficulty in their management was experienced by reason of inadequate capacity and design.

Forty-two samples of the effluent were taken for analysis throughout the year. The results obtained were as set out below.

Samples taken by	Total	Satisfactory	Border Line	Unsatisfactory
Southend Waterworks Company	33	27	3	3
Essex County Council ...	4	4	—	—
Witham U.D.C. ...	5	4	—	1

With regard to the border line and unsatisfactory samples reported upon by the Southend Waterworks Company, all six of these were taken in the months March to May inclusive. The unsatisfactory effluent reported by the Urban Council was a sample from the outfall of the humus tanks, i.e. before land treatment.

Details of the plant at these works will be found in the report of the Chief Sanitary Inspector, who is responsible for their management.

SILVER END SEWAGE WORKS. Apart from their being occasionally overloaded by excess surface water in times of storm, these works functioned satisfactorily during the year. Four samples of the effluent, taken by the County Council, readily complied with the approved standards.

Deterioration of the media in the secondary filters has occurred and renewal cannot be long postponed. When this is done and surface water can be eliminated from the works, these should be amply sufficient for the needs of the area.

RIVENHALL AERODROME SEWAGE WORKS. As the Aerodrome was unoccupied during the greater part of the year no samples of its effluent were taken.

Rivers and Streams.

Pollution by oil of the stream which takes the effluent from Silver End Sewage Works occurred in the early part of the year. This was traced to the surface water drain from an industrial undertaking which discharges into the stream, and steps were taken to prevent recurrence of this pollution.

Public Cleansing.

The whole area, except Rivenhall and Wickham Hill, is covered by a weekly refuse collection. The excepted areas are collected fortnightly. The collection of household refuse is combined with that of salvage.

Refuse disposal is by controlled tipping on the Council's tip at Guithavon Valley. As the available space for tipping was rapidly becoming used up, negotiations for the extension of this tip were in hand at the end of 1946.

The Chief Sanitary Inspector is responsible for refuse collection and salvage, and details of the work done under this heading will be found in his report.

Street cleansing and gully emptying are the responsibility of the Council's Surveyor.

SANITARY INSPECTION OF THE AREA.

It became obvious to the Council that this work, combined with that of meat inspection, responsibility for sewage disposal and refuse collection was too onerous for one sanitary inspector. The appointment of an additional sanitary inspector was made before the end of the year, although the inspector appointed did not take up his duties until 1947.

The work done is set out in the report of the Chief Sanitary Inspector.

Disinfestations.

Four instances of infestation by bed bugs occurred during the year. All were in private houses.

Eradication of vermin was accomplished by the employment of a five per cent D.D.T. solution, with which the premises were sprayed. It was not necessary to subject any bedding to steam disinfection as two properties had been empty for some time and the others were only minor infestations.

There have been no recurrences of the infestation in these cases.

Rats and Mice.

The Council began to operate the Ministry of Food N.S. 12 scheme for Rodent Control on 30th Sept. 1946. The scheme continued in operation throughout the remainder of the year, by which time it was well in hand. This scheme operated very efficiently in that the Council were not required to recover the cost from domestic occupiers in cases where infestation was found.

It is to be regretted that this free domestic service will cease in 1947, when reversion will have to be made to the cumbersome administrative measures of the Rats and Mice (Destruction) Act, 1919.

Factories Act, 1937.

Particulars of the work of inspection of premises under this Act for which the Council, as the Local Authority are responsible for the health measures i.e. the provisions as to sanitary accommodation in all factories and the provisions as to cleanliness, overcrowding, temperature, ventilation and drainage of floors in factories where mechanical power is not used, will be found in the table on page 17.

There were no instances of homework being performed in unwholesome premises.

Factories Act, 1937.

1. INSPECTIONS for purposes of provisions as to health (including inspections made by Sanitary Inspectors).

	Number on Register	Number of		
		Inspections	Written Notices	Occupiers Prosecuted
(i) Factories in which Sections 1, 2, 3, 4 and 6 are to be enforced by Local Authorities	8	10	1	...
(ii) Factories not included in (i) to which Section 7 applies ... ..	...	...	...	...
(a) Subject to the Local Authorities (Transfer of Enforcement) Order, 1938...	...	...	...	...
(b) Others	37	51	1	...
(iii) Other premises under the Act (Excluding outworkers premises)	2	4	...	...
TOTAL ...	47	65	2	...

2. Cases in which DEFECTS were found.

PARTICULARS	Number of cases in which defects were found				Number of cases in which prosecutions were instituted
	Found	Re-medied	Referred to H.M. Inspector	by H.M. Inspector	
Want of cleanliness (S.1)	1	1	...	...	...
Overcrowding (S.2) ... ..	...	...	...	...	...
Unreasonable temperature (S.3) ... ..	...	...	...	...	...
Inadequate ventilation (S.4) ... ..	...	...	...	...	...
Ineffective drainage of floors (S.6) ... ..	...	...	...	...	...
Sanitary conveniences (S.7) ... ..	...	...	...	...	...
(a) insufficient ... ..	...	...	...	...	...
(b) unsuitable or defective	4	4	...	2	...
(c) not separate for sexes ... ..	...	...	...	...	...
Other offences (not including offences relating to homework) ... ..	...	...	...	...	...
TOTAL ...	5	5	...	2	...

Disinfection of raw materials in an outworker's premises was done on one occasion following the occurrence of a case of infectious disease in the house.

The supply of water for drinking purposes to all factories in the District is satisfactory, being from the Council's mains in all cases.

Housing.

To maintain the continuity of records there is given below a list of properties demolished between January 1939 and December 1946, as a result of Slum Clearance Proceedings under the Housing Acts.

Church Street ...	...	Nos.	55, 57, 59, 61, 63, 90, 92, 94, 96.
Maldon Road	...	Nos.	15, 17, 19.
Newland Street	...	Nos.	75, 77, 79, 81, 112, 114, 114B, 116, 145, 147A.
Bridge Street ...	...	Nos.	11, 13, 21, "The Morning Star," 47, 69, 73, 75, 77, 79, 81, 83, 32, 34, 15, 17, 19.
Mill Lane ...	...	Nos.	1, 3, 14, 16, 18, 20, 22, 24, 26, 28.
Powers Hall Road	...	No.	40.
Chipping Hill	...	Nos.	17, 19, 21.
Maltings Road	...	Nos.	5 and 6 Victoria Cottages.
London Road, Rivenhall	Nos.		1, 2, 3, Bungalows.
Oak Road, Rivenhall ...	Nos.		2, Cottages and 1, Clover Cottages. 2 Cottages, Rivenhall Oak.

The following houses due for demolition had not been pulled down before September, 1939. They are still standing, but are vacant by reason of their gross disrepair.

Bridge Street ...	...	Nos.	14, 40, 42, 44, 46, 48, 47, 49, 51, 53, 55.
Church Street ...	...	Nos.	14, 16, 18, 20.
Park Road, Rivenhall ...	Nos.		1 and 2 Waterfall Cottages.
Oak Road Rivenhall			2 Clover Cottages.
Boars Tye Road ...			Wright's Farm House.

The properties below are subjects of Closing Orders.

Church Street ...	...	Nos.	8, 10.
Newland Street	...	No.	42c, 123, 125.

The following houses are the subjects of Clearance Orders, but are still occupied, in some cases by persons who were evacuated to the District during the war years under the Government scheme and who are either unwilling to return to their original areas or unable,

so far, to obtain accommodation there. In December 1946, there were 40 such persons in the District, 32 of whom were living in these properties.

Braxted Road Rivenhall			One Cottage
Oak Road, Rivenhall ...	Nos.		Off Licence and two adjoining Cottages.
			3, Clover Cottages.
			1 and 2, Hope Cottages.
			1, 2 and 3, Thatched Cottages.
Maldon Road	... Nos.		7, 9, 11 and 13.
Powers Hall Road	... Nos.		15, 16, 17, 28, 29, 30, 36, 38.
Lockram Lane	... Nos.		4 and 5.
Mill Lane	... Nos.		2, 4, 6.
London Road, Rivenhall	Nos.		1, 2, 5, 6, 7, 8, 9, 10.

The housing demand in the District in September 1939, when housing work virtually came to a standstill, was some fifty houses. Since then the demand for housing accommodation has naturally risen and the estimate of such requirements at the beginning of 1946 was approximately 300 houses.

As a first step in its housing programme, the Council, during the year, erected 84 pre-fabricated four-room bungalows, 36 at Church Street and Bramston Green, Witham, and 48 at Silver End. At the end of the year 65 of these houses were occupied, 48 at Silver End and 17 at Witham. A site was prepared at Glebe Crescent for the erection of 64 traditional type houses, and construction of these had commenced before the end of the year.

In the year 1946, there were 19 houses constructed by private enterprise throughout the District.

Inspection and Supervision of Food.

MILK SUPPLY. The premises concerned in the production or sale of milk are inspected regularly, and samples are taken for bacteriological and biological examination, by Essex County Council in the case of designated milks and by the Urban District Council in the case of undesignated producers and all retailers.

Registered premises for the production and sale of milk within the District are as follows :—

Tuberculin Tested Producers	...	...	3
Accredited Producers	...	...	4
Undesignated Producers...	...	...	2
Pasteurising Establishment	...	...	1
Dairies (retail)	...	...	1
Milk Shops	...	...	4

There are also three registered retail purveyors of milk from premises outside the Urban District.

During the year 72 samples of milk supplies were taken by the Council's Inspectors. The reports on 10 of these samples were unsatisfactory. All of these unsatisfactory samples were taken from the same dairy. This particular dairy has now ceased to function.

MEAT. There is one Ministry of Food slaughterhouse in Witham, which serves the surrounding area. The population so served, including that of the Urban District, is some 35,000. The premises, while probably the best available for the centralised slaughtering scheme of the Ministry of Food, are not designed to cope with the numbers of animals slaughtered at peak periods, such as occurred in 1946.

The Council's Inspectors undertake the work of meat inspection at the slaughterhouse. This work involves attendance in the evenings, at week-ends and holiday periods. Inspection is often hampered by overcrowding of carcasses in the hanging space.

The table below shows the amount of slaughtering and the numbers of animals inspected during the year.

	Cattle excl'ding Cows	Cows	Calves	Sheep and lambs	Pigs
Number killed	1846	604	1120	4191	298
Number inspected ...	1846	604	1120	4087	298
All Diseases except Tuberculosis.					
Whole carcasses condemned	11	12	4	13	2
Carcasses of which some part or organ was condemned	206	106	3	26	21
Percentage affected... ..	11.7	19.53	0.62	0.93	8.2
Tuberculosis only.					
Carcasses condemned ...	11	24	1	—	1
Carcasses of which some part or organ was condemned	189	139	—	—	7
Percentage affected... ..	10.8	26.9	0.08	—	2.8

An outbreak of food poisoning occurred in the District and surrounding area in July and August. This outbreak has been reported upon by Dr. F. E. Camps, Consultant Pathologist to Essex County Council, who undertook the direction of the investigation. The Council has been furnished with a copy of this report, which was published in the Ministry of Health Monthly Bulletin for May 1947.

The total number of cases formally notified in the Urban District was 175. A further 381 cases were notified in the other areas which obtained their meat supplies from the Witham slaughterhouse. These cases represent only a fraction of the total number of persons affected, as it is known that many did not seek medical advice.

Consequent on the establishment of the source of the infection as being meat distributed from the Ministry of Food's Witham slaughterhouse and contaminated by salmonella aertrycke, these premises were cleansed and disinfected. Negotiations with the Ministry of Food produced an improvement in the sanitary conditions.

Structural improvements were being discussed at the end of the year, but the limitations of the site and the premises themselves are such as to militate against anything approaching ideal conditions for centralised slaughtering.

These events have emphasised that the need for a central abattoir under the Council's control has not decreased with the passage of the years.

OTHER FOODS. Routine inspections were carried out in food shops and places where food is prepared. Section 14 of the Food and Drugs Act 1938 is not applicable in the Urban District as the Council have adopted the Essex County Council Act of 1933.

Details of the foodstuffs condemned as unfit for human consumption during the year will be found in the report of the Chief Sanitary Inspector.

ICE CREAM. There were four manufacturers and vendors of ice cream registered by the Urban Council in 1946 under section 158 of the Essex County Council Act of 1933. Six vendors of ice cream were also registered.

Conditions of manufacture and sale generally were satisfactory throughout the year.

Six samples of ice cream were taken for analysis from four different premises in the District in the year 1946. Two out of the six samples were unsatisfactory as to their bacterial content. A follow-up sample from the worst case produced a satisfactory result after advice had been given to the manufacturer.

Prevalence of and Control over Infectious Disease.

The incidence of cases of notifiable disease other than tuberculosis and infective hepatitis during 1946, was as set out in the table on page 23.

There was no undue prevalence of the common communicable diseases which are not notifiable.

INFECTIVE HEPATITIS.

This condition was made locally notifiable in December 1943 in this District, as being part of the Eastern Region, by the Jaundice Regulations of 1943.

The following table shows the numbers and age distribution of the cases notified since the disease became notifiable.

No case was admitted to Hospital. No deaths occurred from the disease.

Year	At all ages	Under 1 year	1-2	2-3	3-4	4-5	5-10	10-15	15-20	20-35	35-45	45-65	65 & over
1943	1	...	...	...	...	...	...	...	...	1	...	...	...
1944	5	...	...	...	...	...	2	1	...	2	...	...	...
1945	10	...	...	1	...	...	1	...	1	1	2	...	...
1946	17	...	1	...	...	...	2	3	2	3	4	1	1

NOTIFIABLE DISEASE (OTHER THAN TUBERCULOSIS AND INFECTIVE HEPATITIS) NOTIFIED IN 1946.

Notifiable Disease	Number of Cases Notified													Cases admitted to Hospital	Total Number of deaths
	At all Ages	At Ages—Years													
		Under 1 year	1—2	2—3	3—4	4—5	5—10	10—15	15—20	20—35	35—45	45—65	65 and over		
Scarlet fever ...	7	...	...	1	2	2	...	1	1	...	...	...	...	...	...
Whooping cough ...	44	11	6	5	4	16	...	...	1	...	...	...	...	1	1
Measles ...	122	...	8	15	18	58	7	3	1	...	...	...	...	...	...
Diphtheria ...	1	...	...	...	...	...	...	...	1	...	...	...	...	1	...
Ac. pneumonia ...	11	...	...	...	...	1	1	1	4	...	3	1	...	...	...
Dysentery ...	2	...	...	...	...	1	...	...	1	...	...	...	...	...	...
Cerebro-spinal fever ...	2	...	...	...	...	1	1	...	...	...	...	...	...	2	...
Erysipelas ...	2	...	...	...	...	...	...	...	1	...	1	...	...	...	...
Puerperal pyrexia ...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...
TOTAL	192	11	14	21	24	79	9	6	10	...	...	4	1	4	1
Food Poisoning ...	175	7	5	6	3	7	4	11	43	26	42	16	...	...	1

DIPHTHERIA PROPHYLAXIS.

The scheme for the provision of free immunisation against diphtheria to all children below the age of fifteen years, which is operated by the Council and the Essex County Council as the Welfare Authority in the District had been functioning for six years by 31st December, 1946.

At the end of the year the position with regard to immunisation in relation to the child population was as set out below, as far as children dealt with under the arrangements outlined above are concerned.

NUMBER OF CHILDREN WHO HAD COMPLETED A FULL COURSE OF IMMUNISATION AT ANY TIME UP TO 31st DECEMBER, 1946.

Age at 31.12.46 i.e. born in year	Under 1 1946	1 1945	2 1944	3 1943	4 1942	5 to 9 1937-1941	10 to 14 1932-1936	Total under 15
Number Immunised	Nil	50	70	105	123	445	473	1266
Estimated mid- year population 1946	587					1110		1697

The above figures represent, for the 0-4 age group a percentage of 59.3 and for the 5-15 group a percentage of 82.7 children immunised.

It is known that in the past year or two many children have been immunised privately by general practitioners in the District. The number of children so treated cannot be ascertained, but it would be reasonable to estimate that some fifteen to twenty per cent. 0-4 age group are immunised annually under such arrangements.

The one case of diphtheria which occurred in the District during the year was that of a young adult who had not previously been immunised.

TUBERCULOSIS.

Particulars of new cases of Tuberculosis reported during the year and of deaths occurring from the disease, according to age and sex distribution in the District are given below.

Age periods (years)	NEW CASES				DEATHS			
	Pulmonary		Non-Pulmonary		Pulmonary		Non-Pulmonary	
	M	F	M	F	M	F	M	F
0- 1 ...	...	...	...	...	...	...	...	...
1- 5 ...	1	...	...	...	...	...	...	...
5-10 ...	...	...	1	...	...	...	...	...
10-15 ...	...	...	1	...	...	...	...	...
15-20 ...	...	1	...	...	...	...	...	...
20-25 ...	...	3	...	...	1	...	...	...
25-35 ...	1	4	...	...	...	...	...	...
35-45 ...	2	3	...	1	...	...	...	...
45-55 ...	...	...	...	...	...	...	...	...
55-65 ...	1	...	...	...	...	...	1	...
65 upwards	...	...	...	...	...	...	...	...
TOTALS ...	5	11	2	1	1	...	1	...
	16		3		1		1	

At the end of the year there remained 52 cases on the Tuberculosis Register of the District. These were as follows :—

Males.		Females.	
Pulmonary	Non-pulmonary	Pulmonary	Non-pulmonary
21	7	19	5

It is to be noted that five of the cases on the Register are inmates of the Bridge Home Branch of the Royal Eastern Counties Institution for the Mentally Defective.

There are three cases on the Register (two in one family) where the housing conditions are unsatisfactory and four where the accommodation is only in fair condition.

ANNUAL REPORT OF THE CHIEF SANITARY INSPECTOR
FOR THE YEAR 1946

PUBLIC HEALTH DEPARTMENT,
COUNCIL OFFICES,
WITHAM.

*To the Chairman and Members of the Urban District Council
of Witham.*

MR. CHAIRMAN, MADAM AND GENTLEMEN,

I have pleasure in submitting my Annual Report for the year 1946, my first complete year of office since I was appointed by your Council in September, 1945.

In addition to the duties laid down by the Ministry of Health, the Chief Sanitary Inspector administers the Council's two sewage disposal works and the district refuse collection and disposal service.

In view of the limitations of the war and post-war period, I am pleased to report that the sanitary condition of the Urban District is generally satisfactory. Much remains to be done however, to resume the progressive improvement interrupted in 1939. The existence of condemned property still in occupation; primitive sanitation in the rural parts of the area; the general disrepair and lack of maintenance of working class dwelling houses; and hygiene difficulties occasioned in all types of premises by lack of labour and shortage of new equipment cannot be regarded with equanimity. While it may be necessary for some time to come to give attention only to essentials, it is to be hoped that the near future will provide opportunity to achieve, in the older communities of the Urban District, a standard of environmental hygiene in harmony with that which modern planning and design will ensure in the areas of proposed development.

The great amount of work involved in maintaining an up-to-date sanitary service led to the Council's appointment in December, 1946, of an additional Sanitary Inspector. This appointment will enable me to extend the scope of sanitary inspection and control, to ensure adequate supervision of the sewage and refuse disposal services, and to maintain thorough inspection of meat and other foods.

I would like to record my appreciation of the support I have received from the Chairman and Members of the Council and the Public Health Committee. My thanks are due also to the other Officers of the Council for their ready co-operation and assistance, and to the staff and workmen of my department for their loyal support.

I am,

Mr. Chairman, Madam and Gentlemen,

Your obedient servant,

E. H. C. WADHAMS,

Chief Sanitary Inspector.

SANITARY INSPECTION OF THE AREA.

A total of 6,235 visits and inspections were made during the year, as follows :—

Housing and Public Health Acts	372
Complaints (other than dwelling houses) ...	29
Slaughterhouse	753
Other Meat and Food Visits	535
Shops Acts	20
Milk and Dairies	104
Factories and Workshops	65
Tents, Vans and Sheds	71
Places of Amusement	9
Schools	8
Stables and Pigstyes	10
Offensive accumulations	5
Infectious Disease prevention	56
Food Poisoning	501
Water Supplies	54
Streams and Watercourses	12
Drainage	155
Cesspools, Septic Tanks, Pail Closets ...	36
Sewage Disposal	207
Refuse Disposal	174
Salvage	70
Rodent Control	2,634
Miscellaneous	355

In addition, a total of 454 interviews were given to owners, builders, tenants and other interested parties.

Nuisances, etc., on Books, with Number of Notices served.

Number of Notices outstanding, 31st December, 1945	...	8
Number of Informal Notices served during the year	...	123
Number of Statutory Notices served during the year	...	3
Number of Notices complied with during the year	...	118
Number of Notices outstanding, 31st December, 1946	...	135

The following list classifies the nuisances and defects dealt with :—

Defective ashbins replaced or additional ashbins provided						102
Ceiling plaster repaired	...	...	...	...	...	3
Wall plaster repaired ...	...	...	...	...	...	7
Defective floors repaired	...	...	...	...	...	2
Defective windows repaired	...	...	...	...	...	5
Defective doors repaired	...	...	...	...	...	2
Brick arches repaired	...	...	...	...	...	3
Register stoves repaired	...	...	...	...	...	4
Kitchen ranges repaired	...	...	...	...	...	3
Wash coppers repaired	...	...	...	...	...	3
W.C. cisterns repaired	...	...	...	...	...	2
Parapet gutters repaired	...	...	...	...	...	4
Defective roofs repaired	...	...	...	...	...	8
Rainwater tanks renewed	...	...	...	...	...	3
Drains repaired, overhauled, relaid or extended	...	...	...	...	...	13
New drains provided	...	...	...	...	...	1
Interceptor chambers provided	...	...	...	...	...	1
Basements flooding with sewage and surface water	...	...	...	...	...	2
Waste water disposal system provided	...	...	...	...	...	2
Arrangements for disposal of night soil	...	...	...	...	...	1
Offensive ditches cleaned	...	...	...	...	...	3
Cesspools emptied and cleansed	...	...	...	...	...	8
Offensive accumulations	...	...	...	...	...	1
Defective sanitary accommodation	...	...	...	...	...	10
Unsatisfactory water supply	...	...	...	...	...	10
Overcrowding	...	...	...	...	...	5
Vermin infestations	...	...	...	...	...	4

Housing and Public Health Acts.

The defects remedied at dwelling houses as shown in the foregoing table, were all of the nature of nuisances or items of essential repair. No systematic inspection and reconditioning under Sections 5 and 9 of the Housing Act 1936, has been carried out since 1939, in accordance with the advice of the Ministry of Health. While the full resumption of this practice would entail the allocation of a very large proportion of the district's monthly building licence quota, I think that some reconditioning must soon be effected. In this connection it is noticeable that the number of building licence applications in respect of working class houses has been small in relation to the total.

It is regrettable that sub-standard houses, such as those already scheduled for demolition, must remain occupied. In these cases every effort is made to render the houses weatherproof and to ensure essential amenities.

Only once was it necessary to resort to Court proceedings, in the case of nuisances arising at a caravan site. The defendants were fined, and left the district shortly afterwards.

MEAT INSPECTION.

A total of 7,955 animals were inspected at the Ministry of Food slaughterhouse during the year. Inspection of meat in these days of food economy is both more important and more laborious, in that the effort to conserve the maximum amount of wholesome meat involves the slaughter and inspection of sick, injured and poor quality animals. The proportion of condemnations is therefore greater than in pre-war years, as is shown by the following statistics :—

	KILLED		CONDEMNED	
	1938	1946	1938	1946
Cattle, excluding cows	710	1,846	3	22
Cows	12	604	—	36
Calves	135	1,120	3	5
Sheep and Lambs	2,438	4,191	18	13
Pigs	2,266	298	7	3
TOTALS	5,561	8,059	31	79

The diseases and conditions responsible for the condemnation of whole carcasses were as follows :—

	<i>Bullocks and Heifers</i>	<i>Cows</i>	<i>Calves</i>	<i>Sheep</i>	<i>Pigs</i>
Generalised Tuberculosis	11	24	1	—	1
Septic Pericarditis ..	4	2	—	—	—
Septic Peritonitis ..	—	3	—	—	—
Septic Metritis	—	—	—	2	—
Retained Foetus ..	—	—	—	1	—
Other Septic Intoxication	1	3	—	—	—
Osteomyelitis	—	—	—	—	1
Pyæmia	—	1	—	—	—
General Dropsy ..	1	—	—	—	—
General Dropsy with Emaciation ..	—	—	—	4	—
General Dropsy with Johnes Disease ..	1	—	—	—	—
General Dropsy with Paralysis	—	1	—	—	—
General Emaciation ..	—	—	1	5	—
General Emaciation Parasitic	1	—	—	—	—
General Emaciation with Uraemia ..	—	1	—	—	—
General Emaciation with Johnes Disease ..	2	—	—	—	—
General Emaciation with Organic Actinomycosis ..	—	1	—	—	—
Fever, Johnes Disease ..	1	—	—	—	—
Acute Swine Erysipelas	—	—	—	—	1
Immaturity	—	—	1	—	—
Suffocation	—	—	2	—	—
Injury and Bruising ..	—	—	—	1	—
TOTALS	22	36	5	13	3

In all, 30½ tons were condemned during the year.

The abattoir is by no means ideal, nor adequate for the number of animals dealt with during 1946. Following complaints of fly-blowing of meat, and criticism in connection with the outbreak of food poisoning, some improvement was effected, but, as stated by the Medical Officer of Health, the needs of the district can only be met by the provision of a properly designed public abattoir.

INSPECTION OF OTHER FOOD.

The number of premises where food is prepared or retailed is 68, comprised as follows :—

Restaurants	10
Factory and school canteens ...	5
Manufacturing butchers	6
Bakehouses	5
Fried fish shops	2
Retail butchers shops	6
Retail wet fish shops	3
Other retail food shops	31
	—
TOTAL	68
	—

All are subject to inspection and generally found to satisfy the requirements of the Food and Drugs Act, 1938. An appeal circulated to all these establishments during the food poisoning outbreak, to ensure the strictest possible attention to hygiene and to prevent the spread of secondary infection, met with very commendable co-operation.

A considerable amount of unsound food was surrendered to my Department during the year. Details are given below :—

<i>Description.</i>	<i>Weight in lbs.</i>
Custard Powder	10
Baking Powder	4
Egg Substitute	1 $\frac{1}{4}$
Cake Mixture	4
Cereal Foods	16
Biscuits	10
Tinned Milk	79
Tinned Jam	65
Tinned Pudding	3
Corned Beef	50
Tinned Beans	6 $\frac{1}{2}$
Tinned Vegetables	53
Dried Vegetables	194
Tinned Tomatoes	13
Tinned Fruit	6
Dried Fruit	70

Tinned Fish ...	...	...	12
Fish (Wet) ...	...	...	233
Fish (Cured) ...	...	...	392
Fresh Fruit ...	...	...	55
Bacon ...	...	...	52
Butter ...	...	...	4
TOTAL WEIGHT ...			<hr/> 1,332 $\frac{3}{4}$ lbs. <hr/>

MILK AND DAIRIES.

The general standard of milk production in the district is a high one, most of the cowkeepers being producers of designated milk.

Cowsheds and dairies are regularly inspected. Only minor alterations and improvements have been found necessary, but two producers have voluntarily modernised their premises, one having adopted the Auto-Recorder Milking Parlour system and the other being desirous of obtaining a licence to produce "Tuberculin Tested" milk.

Unsatisfactory conditions at one retail dairy were remedied by repairs to the premises, though the retailer continued to experience difficulty in obtaining trained dairy hands, and sample reports at the end of the year were still not all that could be desired.

I would like to express my appreciation of the co-operation and assistance provided by the Essex County Council's Health Inspectors in the matter of milk production.

Details of samples submitted for examination will be found under "Sampling."

ICE-CREAM.

The majority of the ice-cream sold within the Urban District is obtained from large wholesale manufacturers, whose products have been found to be bacterially pure and wholesome. The same high standard is not always maintained by small local manufacturers, chiefly because of a lack of appreciation that ice-cream is comparable with milk for ease of contamination and suitability for bacterial growth. Until it is generally recognised that wholesome ice-cream cannot be manufactured except in dairy type premises under reasonably aseptic conditions, unsatisfactory samples cannot fail occasionally to be reported.

It is to be hoped that the proposed Ice-cream (Heat Treatment) Regulations will ensure a higher standard of hygiene in production and distribution.

WATER SUPPLIES.

In addition to regular sampling of mains water, various minor domestic supplies have been examined during the year.

The unsatisfactory quality of well water serving premises in the southern part of Maldon Road is known to the Council and is a principal reason for the proposed extension to that area of the Council's mains supply.

In the case of one block of rural cottages it was found necessary to arrange transport of water for domestic use from a neighbouring farm and in another case of two such cottages arrangements were made for the tenants to obtain water from a nearby satisfactory source.

One other well supply sampled at the request of a prospective purchaser was found to be satisfactory.

FACTORIES AND WORKSHOPS.

It was not possible, during the year, to carry out as much routine inspection as is desirable. With the appointment of an additional Inspector it will be possible to ensure a closer supervision of these premises.

Various minor defects were remedied at the request of my Department, in co-operation with H.M. Inspector of Factories.

CARAVANS, TENTS AND SHEDS.

A large number of travelling van-dwellers pass through the Urban District in the course of a year. Often the sites chosen for their temporary halts possess no sanitary amenities whatever, but it is usually found that notification of my Department's requirements results in vacation of the sites. In one case, previously mentioned, it was found necessary to take summary proceedings for the abatement of nuisances at such a site.

A matter for some concern is the number of casual agricultural workers who take up temporary summer work on the land and who accommodate themselves in any available shed or barn. Some, failing to find even derelict shelter, sleep out under the hedges. It is to be hoped that eventually, with the co-operation of the farmers, it will be possible to provide at least the minimum requirements of shelter, water supply, cooking facilities and sanitary accommodation. One large fruit packing establishment in the district is setting a fine example in this respect by providing well equipped hostels for its casual employees.

SHOPS ACTS, 1912-1934.

No action was taken under Section 10 of the Shops Act 1934 during the year, though in several cases improvements were carried out upon suggestions from my Department.

INFECTIOUS DISEASE PREVENTION.

During the year 31 cases of infectious disease were investigated. Details of the infections involved will be found in the report of the Medical Officer of Health, to whom is submitted information gained as a result of the enquiries.

In addition, 175 cases of food poisoning were investigated during a period of six weeks. Special reports upon this outbreak were prepared by the Consultant Pathologist, Dr. F. E. Camps, and by the Acting Medical Officer of Health and Chief Sanitary Inspector. The assistance of the Essex County Council Public Health Department in providing inspectorial and clerical staff cannot be too highly appreciated, as without them it would have been impossible to cope adequately with the vast amount of work entailed.

Disinfections, 23 of which were performed, are carried out with formaldehyde vapour; infected bedding and clothing being treated with steam at the Isolation Hospital. Library books are either submitted to an intensive disinfection or destroyed, according to the wishes of the libraries concerned. In addition, disinfectant is issued to the occupiers of premises where infectious disease has occurred.

VERMIN INFESTATION.

The district, as a whole, is gratifyingly free from vermin infestation, only four cases of bed-bug infestation having been dealt with during the year. Disinfestation is carried out by my Department as a rechargeable work, using a D.D.T. insecticide. This has been found to be economical and effective.

Minor pests dealt with are wasps and ants, several infestations of each having been reported during the summer months.

Requests for assistance in fly control are met usually by the issue of an effective insecticide with advice on its use. Several surveys were made to ascertain sources of fly-breeding, and some accumulations of offensive matter were treated before removal. It also became apparent that a certain amount of breeding was taking place in the Guithavon Valley refuse tip, and it became necessary to increase the frequency and strength of the application of insecticide dressing.

SAMPLING.

The following samples were submitted for laboratory examination during the year :—

<i>Sample</i>	<i>Number</i>	<i>Satisfactory</i>	<i>Unsatisfactory</i>
1. MAINS WATER :			
Chemical	6	5	1
Bacteriological	5	4	1
2. WELL WATER :			
Chemical	6	4	2
Bacteriological	7	4	3
3. MILK :			
Tuberculin Tested	2	2	—
Accredited	3	3	—
Pasteurised	18	13	5
Ordinary	31	29	2
4. MILK RINSINGS :			
Churn	8	8	—
Bottle	10	6	4
5. ICE CREAM :			
Heat Treated	4	2	2
Cold Mix	2	2	—
6. FOOD :			
Flour	1	1	—
Bread	5	5	—
Milk	4	4	—
Meat (various)	4	4	—
Cutting Boards	7	7	—
Utensils	5	5	—
Wipers, Cloths, etc.	6	6	—
Corned Beef	1	1	—
Sausage Casings	1	1	—
Dried Egg	3	3	—
Miscellaneous	10	10	—
7. SEWAGE :			
Crude	1	1	—
Effluent	47	43	4
TOTALS	197	173	24

The samples included under (6) were all taken during the food poisoning outbreak.

RODENT CONTROL.

The year 1946 provided some variations in the Council's usual disinfestation routine. For some years, a free disinfestation service had been provided for all domestic premises except in cases of obvious fault or neglect. This system was criticised by the Ministry of Health's District Auditor early in the year and the Council had to apply for dispensation for expenditure (approximately £60 per year) incurred under this head during 1944-5 and 1945-6. Furthermore, from 1st April, 1946, in accordance with this decision, it became necessary to recover expenses incurred in all disinfestations. From 30th September, 1946, the Ministry of Food's N.S. 12 scheme, again allowing free domestic service, was in operation. It is anticipated that this special scheme, and its subsidy by the Ministry of Food, will end during the summer of 1947, and from that date recovery of expenditure from occupiers must be again undertaken.

The considerable decrease in the number of complaints received during the six months of the year when a free service was not available was sufficient to show that such a service is essential to efficient rodent control in the district. Without it, my Department cannot become aware of infestations without extensive inspections to find them, the cost of which surveys must presumably be borne by those occupiers unfortunate enough to suffer infestation.

I am of opinion that rodent control is of sufficient national importance for every inducement to be given to the public to report instances of rat and mouse infestation, in order that the systematic and effective treatment provided by the local authority can be undertaken at the earliest possible moment. It is unfortunate that the unwieldy procedure of the Rats and Mice (Destruction) Act, 1919, if followed in detail, can allow minor infestations to become major ones before treatment can be carried out. Furthermore, attempts by occupiers to effect disinfestation of their own premises, as required by the Act, are often more hindrance than help to the local authority's system. Such sporadic attempts in many cases fail to eradicate all the vermin present, and the continued use of proprietary poisons has been known to cause "bait prejudice," rendering ultimate disinfestation by the local authority's staff much more difficult than need be.

I would like to state my appreciation of the harmonious co-operation which exists between the Rodent Control Section of the Ministry of Food and my Department, and which has given very satisfactory results in the various disinfestation schemes undertaken. All that is needed to perfect the service is the correlation of the local authority's and the Ministry of Food's work with that of the Ministry of Agriculture, together with the provision of a free service for domestic occupiers.

Details of infestations dealt with during the 1946-7 financial year are as follows :—

Inspections made	...	...	...	1,870
Infestations found :				
Minor (up to 20 rats)	...	...	...	152
Major (20 to 200 rats)	...	...	...	12
Reservoir (over 200 rats)	...	...	...	1
Treatment visits made	...	...	...	1,780
Bodies recovered :				
Rats	...	...	...	840
Mice	...	...	...	140
Estimated kill (M.O.F. formula) :				
Rats	...	...	...	1,878
Mice	...	...	...	460

In addition the sewage schemes of the district have been treated as follows :

Test Baits	...	...	...	3
First Treatments	...	...	...	2
Maintenance Treatments	...	...	...	1
Estimated total kill	...	...	...	290

Baits used are sausage rusk and sweetened bread mash, and poisoning is effected by zinc phosphide or arsenic trioxide. Various baits prepared from condemned food have also proved successful, particularly in cases of " bait prejudice " where previous disinfestation or the use of proprietary poisons has led to the need for disguise.

REFUSE COLLECTION AND DISPOSAL.

The Council has undertaken the collection of house refuse throughout the whole of the Urban District. A weekly collection is maintained except in the cases of Rivenhall and Blue Mills Hill, where collection is fortnightly.

One vehicle only is used for collection purposes. The 7 cubic yards Fordson vehicle, being eleven years old and unserviceable, was replaced in November, 1946, by an 8 cubic yard Shelvoke and Drewry freighter. The old vehicle had completed some 50,000 miles of refuse collecting work in the Urban District.

Details of the service, and the cost of maintaining it during the year 1946-1947 will be found in the table on page 39. This table is copied from the pre-war Ministry of Health Cleansing Service return. It has not been possible, for 1946, to differentiate collection from disposal costs, but it is hoped to do this in future years.

The increase in the number of houses in the district has an immediate effect upon the refuse collection system, the present number of properties, 2,250, being almost as many as one collection gang can manage in a week. The effect of an extra cubic yard in vehicle body space has somewhat offset the 1946 increase in the number of bins to be emptied, but further expansion of the district will involve the need to consider the expansion of the collection service.

Disposal is by controlled tipping on the Council's riverside land in Guithavon Valley. This site is almost completed, and negotiations were in progress at the end of the year to extend tipping to adjoining L.N.E.R. Company's land, and to other land in the ownership of the Council on the north side of the railway viaduct. The tipping scheme is closely linked with the Council's proposals for the improvement of the riverside area as a whole.

SALVAGE.

Collection of Salvage is effected in conjunction with house refuse collection, the following table showing income from salvage sold during the financial year 1946-1947 :—

					£	s.	d.
Paper	...	...	...	...	276	18	3
Bones	...	...	...	...	36	8	7
Rags, etc.	...	...	...	...	21	0	6
Metal	...	...	...	...	20	4	0
Bottles	...	...	...	...	8	7	6
Kitchen waste	...	...	...	...	14	4	8
Other	...	...	...	...	4	0	11
Board of Trade grant	...	...	...	...	11	0	0
					<hr/>		
					£392	4	5
					<hr/>		

Against this income must be held an amount of £242 10s. 0d. for collection and disposal costs, printing and publicity, etc., leaving a net profit of £150, approximately equivalent to a penny rate. Total collection of all types of salvage has fallen considerably since the peak year (1942) when £765 was recovered. But salvage collection is still a profitable undertaking as well as an essential part of the national economy.

REFUSE COLLECTION AND DISPOSAL.

TABLE SHOWING COSTS FOR THE YEAR ENDING 31ST MARCH, 1947.

	<i>Total, Collection and Disposal, with depreciation or loan charges included or excluded</i>					
	<i>Included</i>			<i>Excluded</i>		
	£	s.	d.	£	s.	d.
A. Gross Expenditure	1,741	19	3	1,682	16	4
B. Gross Income	394	9	2	394	9	2
C. Nett Cost	1,347	10	1	1,288	7	2
<i>Unit Costs</i>						
D. Nett cost per ton		15	5		14	9
E. Nett cost per 1,000 population	169	5	5	161	17	0
F. Nett cost per 1,000 houses or premises from which refuse is collected	598	17	8	572	12	0
<i>Rate Poundage</i>						
G. Nett cost, equivalent rate in the pound			8·562			8·186
H. Percentage of G. to total rate in pound			4·3			4·11

- | | | | |
|-----|---|-------|---------------|
| 1. | Total refuse collected in tons (estimated) | .. .. | 1,747. |
| 2. | Population .. .. | .. .. | 7,960. |
| 3. | Area (statute acres) .. .. | .. .. | 7,329. |
| 4. | Weight in cwts. (per 1,000 population) per day (365 days to year) .. .. | .. .. | 12. |
| 5. | Number of houses and premises .. .. | .. .. | 2,250. |
| 6. | Rateable value .. .. | .. .. | £41,053. |
| 7. | Produce of a penny rate .. .. | .. .. | £157 7s. 6d. |
| 8. | Total rates in the £ .. .. | .. .. | 16s. 7d. |
| 9. | Method of collection—mechanical vehicles .. .. | .. .. | 1. |
| 10. | Method of tipping. Controlled tipping, i.e., on lines of Ministry's precautions .. .. | .. .. | 100 per cent. |
| 11. | Average length of journey .. .. | .. .. | 5½ miles. |
| 12. | Percentage of refuse collected .. .. | .. .. | 100. |

SEWAGE DISPOSAL.

There are three major Sewage Disposal plants in the Urban District, two owned and maintained by the Council and one by H.M. War Department. The Urban District sewage plants serve the Witham and Silver End communities, and the third plant treats sewage from the Rivenhall Aerodrome in the Braintree Rural District.

The administration of the Council's Sewage Works was transferred to the Sanitary Inspector's Department in October, 1945.

Maldon Road Works, Witham.

This plant, serving the township of Witham, was developed from a land treatment plant installed some seventy years ago. It consists of screening, settlement, sludge drying, aeration, and humus removal equipment, but as shewn in the details below is inadequate for the amount of sewage now discharged. It would be possible, if no future development of Witham were to occur, for the plant to be improved and enlarged to modern requirements, but in view of the proposed expansion of the district such work has been postponed in order that the ultimate improvements may provide for this expansion. Meanwhile, by careful administration and maintenance it has been possible to obtain a satisfactory standard of purification, 83 per cent. of samples being designated good, 7 per cent. borderline and 10 per cent. unsatisfactory.

The sewage is discharged at the plant by two main sewer systems, the high and low level trunk sewers. The former discharges about 155,000 gallons and the latter about 80,000 gallons daily during dry weather. The total, 235,000 gallons, has been known to increase to over 2,500,000 in very wet periods, when, as the plant and storm water overflows can cope with only 500,000 gallons, the plant is in a state of flood. Fortunately, such heavy flows are rare, but in any period of wet weather some portion of the increased flow must be diverted direct to the river Brain or to the irrigation area above the effluent channels.

Details of the plant and the flows dealt with are given below :—

Area served	...	...	...	4 square miles approx.
Population (estimated)	...	...	...	5,800.
Connections to sewers	...	...	...	1,450.
Dry weather flow at works :				
High level	...	...	...	155, 000 gallons per day.
Low level	...	...	...	80,000 gallons per day.
Total	...	...	...	235,000 gallons per day.

Treatment Plant.

1. LOW LEVEL PUMPHOUSE SUMP. Capacity 13,500 gallons. Electrically driven alternating 3 inch pumps to lift sewage to detritus tanks.
2. DETRITUS TANKS (2). Capacity 3,000 gallons each.
3. SETTLEMENT TANKS (2). Capacity 39,000 gallons each, equivalent to 7 hours' retention.
4. STORM WATER OVERFLOW. Operates at 12,500 gallons per hour (only $1\frac{1}{4}$ D.W.F.). Flow discharges into large open earth lagoon, underdrained and with overflow to sludge drainage system, and thence to large lagoon on irrigation area. This lagoon involves a constant danger of contamination of the effluent channel, but cannot in present circumstances be dispensed with.
5. PERCOLATING BEDS (4). Capacity 1,640 cubic yards, giving 150 gallons per cubic yard per day at D.W.F.
6. HUMUS TANKS. (2). Capacity 7,650 gallons each, giving $1\frac{1}{2}$ hours' retention.
7. IRRIGATION AREA: $2\frac{1}{2}$ acres.

Sludge Drying.

1. PUMPS. Pumped by 2 I.C. driven 3 inch pumps to open lagoons.
2. LAGOONS. (a) 8 for settlement sludge, capacity 400 square yards underdrained to irrigation area.
(b) 4 for humus sludge, capacity 120 square yards, not underdrained.

The above figures show that the plant's optimum capacity would be about 180,000 gallons D.W.F., equivalent to a population of 4,500. In other words the present overload is of the nature of 30 per cent.

SILVER END SEWAGE WORKS.

This plant, a comparatively modern one, was constructed for the Crittall Manufacturing Company Ltd., to serve the Company's housing estates at Silver End. The works were later taken over by the Witham Urban District Council.

The situation of the plant is such that a considerable amount of trespassing occurs. Following notification to the police, summary proceedings were taken against lads found on the works, and fines were imposed. Though trespassing lessened after this, it was still

occurring at the end of the year. Minor items of equipment have been stolen, and much inconvenience caused by indiscriminate opening and closing of valves. The Council has decided to house the works foreman on adjacent land, in order that more supervision may be exercised.

Design and operation of the plant would be, with minor exceptions, adequate and satisfactory, but for the fact that the Silver End Estate was intended to be sewered on the *separate* system, and the plant was not designed to cope with the vast amount of surface water which enters the sewers in wet weather. No storm water facilities exist, and it has been necessary to run a 6 inch overflow pipe direct to the effluent stream to prevent flooding of the pump-house. Even with this overflow in operation, the pumps, working against the flow, tend to overload the plant. This condition could be remedied by the provision of storm water holding tanks, but it is considered that it would be preferable to have the surface water diverted from the soil sewers. The Silver End Development Company has been asked to give attention to this matter.

The only other defect at these works during the year was the unsatisfactory condition of the secondary percolating beds, the medium of which, by reason of age and deterioration, allows considerable "ponding." Coupled with this, the design of the secondary filters involves their working at three times the rate of the primary filters, which cannot be satisfactorily achieved when the plant is working to capacity, owing to lack of head and the small size of the supply pipes. When the medium of the secondary filters is renewed, it is hoped to improve matters by increasing the pressure, and thus avoid the necessity for providing additional secondary percolating beds.

During the year a uniformly excellent standard of purification was maintained, all of the samples taken proving to be satisfactory.

The plant is conventional in design, except that the humus tanks are placed between the primary and secondary filters, which seems to indicate that the latter were not included in the original design, but were an addition to it. Details of the plant and its working are as follows :—

Area served	...	...	1 square mile (approximate).
Population (estimated)	...	...	1,600.
Sewer connections	...	...	529.
Dry weather flow	...	...	60,000 gallons daily.

Treatment Plant.

1. PUMPHOUSE AND SUMP. Sump capacity 1,000 gallons. Two electrically driven 3 inch pumps lift sewage to detritus tanks.
2. DETRITUS TANKS (2). Capacity 3,000 gallons.
3. SETTLEMENT TANKS (4). Capacity 70,250 gallons of which 52,500 in constant use, i.e., approximately 21 hours' retention.
4. PRIMARY PERCOLATING BEDS (2). Capacity 1,040 cubic yards, giving approximately 57 gallons per cubic yard per day.
5. HUMUS TANKS (2). Capacity 7,950 gallons giving 3 hours' retention.
6. SECONDARY PERCOLATING BEDS (2). Capacity 373 cubic yards, giving approximately 161 gallons per cu. yard per day.

Sludge Disposal.

1. SUPPLY. By gravitation from detritus, settlement and humus tanks.
2. SLUDGE LAGOONS. Three concrete and two clinker-based underdrained lagoons, draining to pumphouse sump. Two undrained earth lagoons were also in use. These have been underdrained during the year and a third earth lagoon has been constructed.

The above figures indicate that if surface water were diverted and secondary aeration improved, the plant would be capable of dealing with an increase of 25 per cent. on the present D.W.F. A greater increase of up to 60 per cent. over present flow could be met without major expansion of the works.

RIVENHALL AERODROME SEWAGE WORKS.

The plant at this aerodrome is of wartime construction. Its design and operation are modern and satisfactory, and it is capable of treating sewage from a population of 2,000. Unsatisfactory samples obtained during the war years were found to be due to wrong maintenance methods, but when operated properly the plant produced a uniformly good effluent.

The aerodrome has been unoccupied during the major part of 1946 and the plant has therefore been out of operation. The arrival of Polish troops and displaced persons at the end of the year involved a resumption of sewage treatment, though not to the full capacity of the works. Staff of H.M. War Department are responsible for the plant, and at their request the Council's Silver End works foreman visits periodically to advise on routine maintenance.

No samples were taken during the year under review.

STAFF.

Various staff changes occurred during the year, the office staff being increased by the appointment of an additional Sanitary Inspector, and the outside staff establishment being slightly increased after consideration by the Council of the staff requirements of all departments. Details of my Department's staff at 31st December, 1946, were as follows :—

OFFICE :

Chief Sanitary Inspector, Meat and Foods Inspector.
Additional Sanitary Inspector.
Clerical Assistant.

REFUSE COLLECTION AND DISPOSAL :

1 foreman driver.
1 tip-foreman.
3 refuse loaders.
1 tiphand.

SEWAGE DISPOSAL :

2 works foremen.
3 labourers.
1 junior labourer.

OTHER :

1 Disinfector/Rodent operative (part-time).

The average age of the permanent outside staff is now slightly less than 40 years, a number of the more elderly having been replaced by young men.

